

REMARKS

This is a response to the Office action that was issued in connection with the above-identified patent application on May 4, 2007. Prior to entry of this amendment, claims 1-75 were pending. With entry of this amendment, claims 1-3, 5-64, 67, 70-72, and 74-80 are currently pending, with claims 16, 33, and 40-64 being withdrawn from consideration, claims 76-80 being new, claims 1, 5-6, and 67 being amended, and claims 4, 65-66, 68-69, and 73 being cancelled without prejudice.

Claims 1-15, 17-26, 35-39, 67-71, and 74-75 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,469,944 to Bocard et al. ("Bocard") in view of U.S. Patent No. 6,447,736 to Autenrieth et al. ("Autenrieth"). Claims 27-32, 34 and 72 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bocard in view of Autenrieth, as applied to claims 1 and 67, and further in view of U.S. Patent No. 5,175,062 to Farooque et al. ("Farooque"). Claims 40-42 were objected to for depending from a rejected base claim, but these claims were otherwise indicated to be allowable.

Claim 1 was further rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,719,832 and Autenrieth. Claim 1 was also rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of Application No. 10/016,807, now U.S. Patent No. 7,201,783, in view of Bocard and Autenrieth, and provisionally rejected over claim 1 of Application

No. 11/247,744 in view of Bocard and Autenrieth. Claim 1 was further rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of Application No. 10/989,907, now issued U.S. Patent No. 7,052,530 in view of Autenrieth.

Rejections under 35 U.S.C. § 103(a)

Claims 1-15, 17-26, 35-39, 67-71 and 74-75 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bocard in view of Autenrieth, and in the case of claims 28, 31 and 34, additionally in view of Farooque. Applicants respectfully traverse the rejections but have amended the claims to make the claimed subject matter more clear.

Amended claim 1 now recites a fuel processor that comprises, amongst other structure, a shell, a hydrogen-producing region, and a separation region, wherein at least a portion of the fuel processor is a modular component that is adapted to be accessed, removed from and replaced as a unit into an operational position of the fuel processor without substantial disassembly of the fuel processor, and further wherein the modular component is operatively coupled to the fuel processor by at least one releasable fitting. As explained in the specification on at least page 25, lines 10-18, the modular components of the claimed fuel processor may be readily removed as a unit from the fuel processor without requiring the level of disassembly traditionally required.

In contrast, Autenrieth discloses a reactor unit of the plate stack type, in which each system component is serially connected by means of a plurality of penetrating connection ducts. For example, the disclosed reactor unit has two catalytic burners, 7 and 8, at far ends of the reactor unit. As shown in Fig. 1 and disclosed in column 4, lines 38-42, “[a] connection duct 20 ... leads from the outlet side of the evaporator-side burner 7 to the inlet side of the reformer-side burner 8, and *in the process passes through the intermediate modules*” (Emphasis added). The disclosed reactor unit structure, therefore, teaches away from a modular component adapted to be accessed, removed from, and replaced as a unit without requiring substantial disassembly of the reactor unit. Autenrieth further fails to teach or suggest a modular component operatively coupled to a fuel processor by a releasable fitting.

Turning now to the cited Bocard reference, as explained in the May 4, 2007 Office action, Bocard fails to teach that the recited structural elements and connections are detachable (See, for example, page 3 of the May 4, 2007 Office action). Accordingly, Bocard also fails to teach modularity of the recited structural elements, as detachability is a feature of modularity. Bocard further fails to disclose a fuel processor having at least one releasable fitting. For at least these reasons, amended claim 1 should be patentable over Bocard in view of Autenrieth.

Amended claim 1 is additionally patentable over the cited references because, like Autenrieth, Bocard teaches away from a fuel processor, wherein a

portion of the fuel processor is adapted to be accessed, removed from, and replaced as a unit into an operational position of the fuel processor without requiring substantial disassembly of the fuel processor. An objective of the apparatus disclosed in Bocard is “to conserve heat and provide a compact apparatus” (Col. 3, lines 2-4). Bocard specifically requires “an interdigitated relationship” between a reformer device and a plurality of palladium cells for heat exchange between the two components (See col. 5, lines 24-27 and Fig. 4). Bocard further provides that the reformer device and palladium cells are nested in a single sealed insulated housing (See col. 5, lines 33-38 and Fig. 4). The structure disclosed in Bocard teaches away from easily accessible components, which may be accessed, removed from, and replaced as a unit, without requiring substantial disassembly of the fuel processor. For at least this additional reason, amended claim 1 is patentable over the cited references.

Claims 2-3, and 5-64 depend from amended claim 1 and therefore should be allowed when amended claim 1 is allowed.

Original independent claims 65 and 66 have been cancelled without prejudice in view of these independent claims previously being withdrawn from consideration. Applicants are not abandoning the subject matter of these claims, and Applicants understand that prosecution of these claims may be resumed in a related application.

Turning now to amended claim 67, claim 67 now recites a fuel processor adapted to produce hydrogen gas from a feed stream, the improvement comprising

at least one cartridge-based component forming an operative portion of the fuel processor and being adapted to be accessed, removed from, and replaced as a unit into an operative position as a portion of the fuel processor, wherein each of the at least one cartridge-based components is removably coupled in the operative position by at least one releasable fitting and further wherein the fuel processor includes a shell containing an access port through which at least one of the at least one cartridge-based components may be accessed, removed from, and replaced as a unit into the operative position within the fuel processor.

As discussed above, Autenrieth fails to teach or suggest a cartridge-based component removably coupled by a releasable fitting. Autenrieth further fails to teach or suggest a shell, thus, also fails to disclose a shell containing an access port. As discussed above, Bocard fails to teach or suggest a cartridge-based component. Bocard further fails to teach or suggest a shell containing an access port. For at least these reasons, amended claim 67 is patentable over the cited references.

Claims 70-72 and 74-77 depend from amended claim 67 and therefore should be allowed when amended claim 67 is allowed.

Turning now to the cited reference to Farooque and claims 27-32, 34 and 72, and similar to the previously discussed Autenrieth and Bocard references, Farooque fails to teach or suggest a fuel processor including a modular component as claimed. Furthermore, Farooque is directed to a reformer and fuel cell stack that are integrated into a sealed housing. It follows that Farooque teaches away from

the proposed modification to include a cartridge-based, or modular, filter assembly to the system of Bocard. For at least this additional reason, claims 27-32, 34 and 72 are patentable over the cited references.

Support for new claims 76-77 comes from at least page 26, lines 2-4, and page 28, lines 7-10, of the specification.

The Examiner indicated on page 15 of the May 4, 2007 Office action that claims 40-42 would be allowable if written in independent form. New independent claims 78-80 correspond to allowable claims 40-42. Applicants therefore understand new claims 78-80 to be in a condition for formal allowance.

Rejections for obviousness-type double patenting

Original claim 1 was rejected for obviousness-type double patenting over various patents and patent applications assigned to IdaTech in view of Bocard and Autenrieth. Applicants respectfully traverse and request withdrawal of each of these rejections for at least reasons analogous to reasons that were discussed above in connection with claim 1 and the §103(a) rejections based on Bocard and Autenrieth. However, in view of the above amendments to claim 1, in which the subject matter of original claim 4 and additional newly recited subject matter was added to claim 1, Applicants submit that the obviousness-type double patenting rejections are rendered moot. Perhaps more specifically, no obviousness-type double patenting rejections were made to original claim 4. It follows that

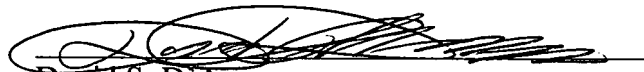
amended claim 4 similarly should not be rejected under the doctrine of obviousness-type double patenting.

Conclusion

Applicants believe that the present application is in condition for allowance, in view of the above remarks. Accordingly, Applicants respectfully request that the Examiner reconsider the pending claims. If there are any remaining issues or if the Examiner has any questions, Applicants' undersigned attorney may be reached at the number listed below. Similarly, if the Examiner believes that a telephone interview may be productive in advancing prosecution of the present application, the Examiner is invited to contact Applicants' undersigned attorney at the number listed below.

Respectfully submitted,

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